

City of Cambridge Contributory Retirement System

*Actuarial Valuation and Review
as of January 1, 2006*

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May 19, 2006

*Retirement Board
City of Cambridge Contributory Retirement System
255 Bent Street, 3rd Floor
Cambridge, MA 02141*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of January 1, 2006. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2007 and later years and analyzes the preceding two years' experience.

The census information and financial information on which our calculations were based was prepared by the staff of the Cambridge Retirement System. That assistance is gratefully acknowledged. The actuarial calculations were completed under my supervision.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

THE SEGAL COMPANY

By:

*Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary*

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SECTION 1: Valuation Summary for the City of Cambridge Contributory Retirement System

Purpose

This report has been prepared by The Segal Company to present a valuation of the City of Cambridge Contributory Retirement System as of January 1, 2006. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of M.G.L. Chapter 32;
- The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of January 1, 2006;
- The assets of the Plan as of December 31, 2005;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The actuarial valuation report as of January 1, 2006 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected.
- During the plan years ended 2004 and 2005, the market value rate of return was 9.25% and 6.39%, respectively. Because the actuarial value of assets gradually recognizes market value fluctuations over a five-year period, the actuarial rate of return for the plan years ended 2004 and 2005 was 4.46% and 4.94%, respectively. The actuarial value of assets as of December 31, 2005 was \$632.1 million, or 100.8% of the market value of assets of \$627.2 million. As of December 31, 2003, the actuarial value of assets was 106.9% of market value.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment loss as of December 31, 2005 is \$4.9 million. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.50% per year (net of expenses) on a **market value** basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.50% rate and all other actuarial assumptions are met, the contribution requirements will increase more than expected in each of the next few years.

SECTION 1: Valuation Summary for the City of Cambridge Contributory Retirement System

- The unfunded liability has increased from \$85.6 million as of January 1, 2004 to \$108.3 million as of January 1, 2006 compared to an expected unfunded liability of \$67.4 million as of January 1, 2006. The increase is primarily due to an investment loss of \$46.4 million, partially offset by salary increases less than expected and fewer disabilities than expected.
- This valuation reflects the following:
 - The administrative expense assumption was increased from \$660,000 for calendar 2004 to \$900,000 for calendar 2006.
 - The salary increase assumption was lowered from 5½% to 4½% for the next three years.
 - In 2004, the Public Employee Retirement Administration Commission approved a new mortality table and interest rate to be used in the calculation of the optional form of payment factors. This valuation reflects the change to the new factors.
 - This valuation reflects the additional liability due to the increased benefits for veterans who retire on an accidental disability.
- The recommended contribution for fiscal 2007 was set at the City's budgeted amount of \$25,191,755, plus an additional contribution of \$1,889,400, for a total amount of \$27,081,155. In fiscal 2008 and later, the recommended contribution will be the prior year's budgeted amount increased 3% plus an addition contribution of \$200,000. This will result in a fiscal 2008 appropriation of \$26,147,508 and a fiscal 2009 appropriation of \$26,925,933. The 1992 ERI liability will be funded in fiscal 2008, the 2002 and 2003 ERI liability will be funded in fiscal 2009 and the remaining unfunded liability will be funded in fiscal 2015. The prior funding schedule fully funded the System in 2013. Exhibit G in Section 3 shows the detail of the funding schedule.

SECTION 1: Valuation Summary for the City of Cambridge Contributory Retirement System

Summary of Key Valuation Results

	2006	2004
Contributions:		
Recommended for fiscal 2007 and 2005	\$27,081,155	\$23,977,875
Recommended for fiscal 2008 and 2006	26,147,508	24,577,322
Funding elements for plan year beginning January 1:		
Normal cost, including administrative expenses	\$26,598,040	\$25,374,980
Market value of assets	627,154,599	532,772,014
Actuarial value of assets	632,059,327	569,500,055
Actuarial accrued liability	740,320,358	655,106,691
Unfunded actuarial accrued liability	108,261,031	85,606,636
GASB 25/27:		
Annual required contributions	\$27,081,155	\$23,977,875
Actual contributions	--	23,977,875
Percentage contributed	--	100.00%
Funded ratio	85.38%	86.93%
Demographic data:		
Number of retired participants and beneficiaries	1,736	1,746
Number of inactive participants entitled to a return of their employee contributions	846	822
Number of inactive participants with a vested right to a deferred or immediate benefit	224	N/A
Number of active participants	3,739	3,825
Total payroll*	\$192,763,275	\$174,937,539
Average payroll*	51,555	45,735

* Payroll figures are for the prior calendar year. Calendar year 2005 payroll figures were increased by 3.0% for members of the Housing Department to reflect unsettled bargaining contracts.

SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, inactive participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A and B.

A historical perspective of how the participant population has changed over the past five valuations can be seen in this chart.

CHART 1

Participant Population: 1997 – 2005

Year Ended December 31	Active Participants	Inactive Participants*	Retired Participants and Beneficiaries
1997	3,400	380	1,606
1999	3,655	392	1,629
2001	3,870	675	1,662
2003	3,825	822	1,746
2005	3,739	1,070	1,736

* Excludes terminated participants due a refund of employee contributions prior to 2001.

SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

Active Participants

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 3,739 active participants with an average age of 44.9, average years of service of 10.7 years and average payroll of \$51,555. The 3,825 active participants in the prior valuation had an average age of 43.7, average service of 10.1 years and average payroll of \$43,735.

Among the active participants, there were none with unknown age and/or service information.

Inactive Participants

In this year's valuation, there were 224 participants with a vested right to a deferred or immediate vested benefit and 846 participants entitled to a return of their employee contributions.

These graphs show a distribution of active participants by age and by years of service.

CHART 2

Distribution of Active Participants by Age as of December 31, 2005

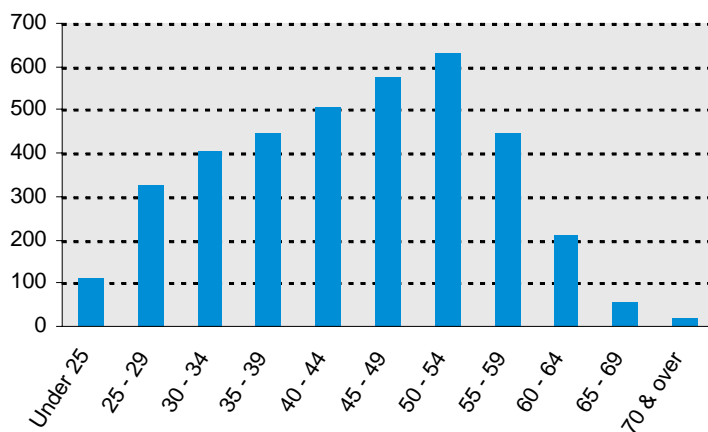
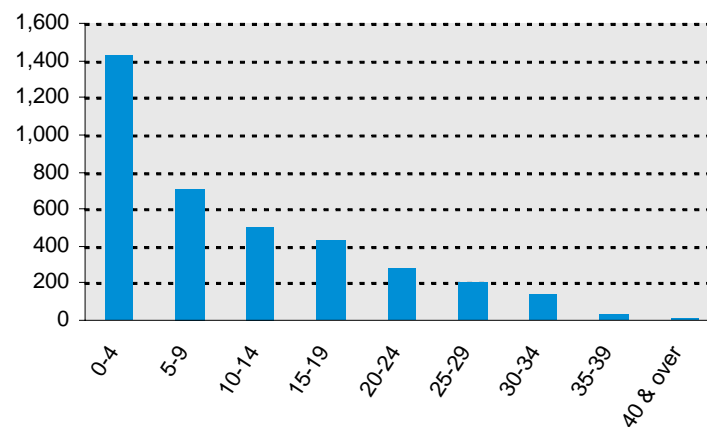


CHART 3

Distribution of Active Participants by Years of Service as of December 31, 2005



SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

Retired Participants and Beneficiaries

As of December 31, 2005, 1,370 retired participants and 366 beneficiaries were receiving total monthly benefits of \$3,077,300 excluding COLAs reimbursed by the Commonwealth. For comparison, in the previous valuation, there were 1,377 retired participants and 369 beneficiaries receiving monthly benefits of \$2,758,974 excluding COLAs reimbursed by the Commonwealth. There were three retired participants in suspended status this year.

These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age, by type of pension.

CHART 4

Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2005

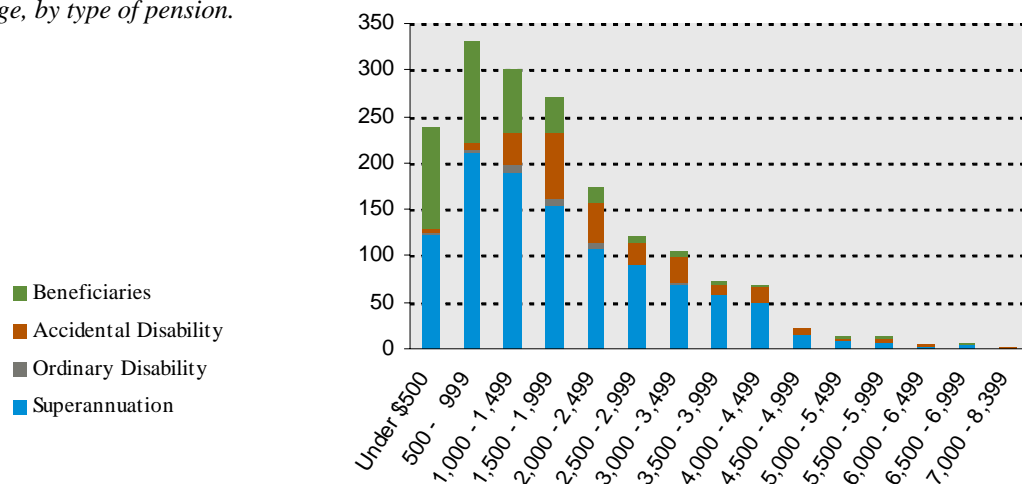
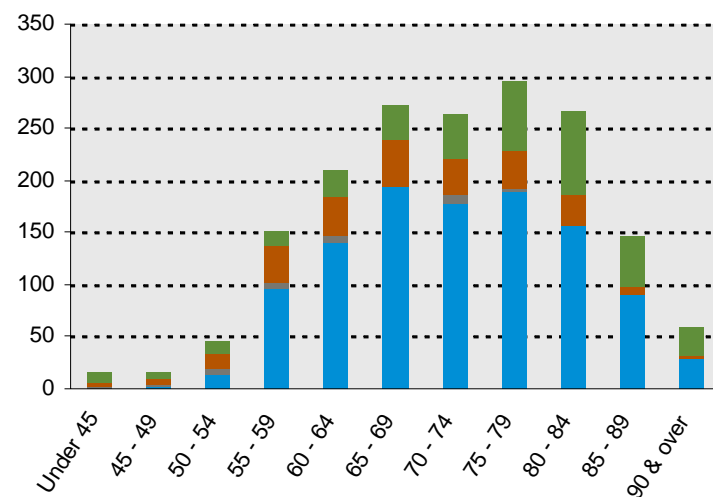


CHART 5

Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2005



SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

B. FINANCIAL INFORMATION

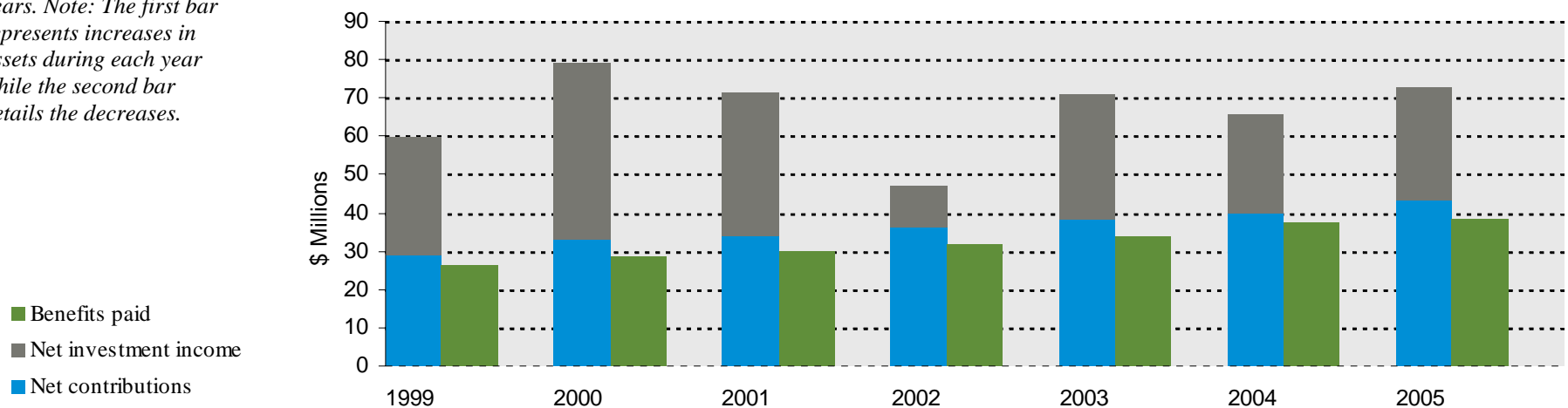
Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C and D.

The chart depicts the components of changes in the actuarial value of assets over the last seven years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 1999 – 2005



SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7

Determination of Actuarial Value of Assets for Year Ended

		December 31, 2005	December 31, 2004
1. Market value of assets		\$627,154,599	\$584,604,624
Calculation of unrecognized return*	Original amount	Unrecognized return	Unrecognized return
2. (a) Year ended December 31, 2005	-\$12,370,548	-\$9,896,439	N/A
(b) Year ended December 31, 2004	3,989,768	2,393,861	3,191,814
(c) Year ended December 31, 2003	46,664,465	18,665,786	27,998,679
(d) Year ended December 31, 2002	-80,339,680	-16,067,936	-32,135,872
(e) Year ended December 31, 2001	-59,326,299	0	-11,865,260
(f) Total unrecognized return		-4,904,728	-12,810,639
3. Preliminary actuarial value: (1) - (2f)		632,059,327	597,415,263
4. Adjustment to be within 20% corridor		0	0
5. Final actuarial value of assets: (3) + (4)		<u>\$632,059,327</u>	<u>\$597,415,263</u>
6. Actuarial value as a percentage of market value: (5) ÷ (1)		100.8%	102.2%

* Unrecognized return is the difference between the total return and the expected return on a market value basis and is recognized over a five-year period.

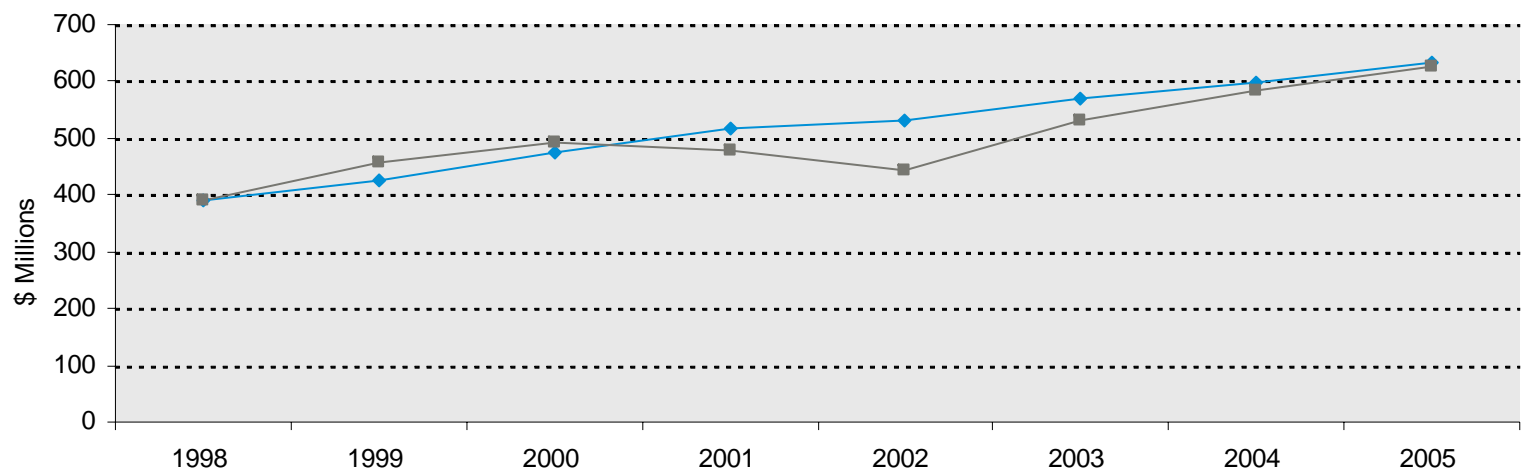
SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

Both the actuarial value and market value of assets are representations of the Cambridge Retirement System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Cambridge Retirement System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past eight years.

CHART 8

Actuarial Value of Assets vs. Market Value of Assets as of December 31, 1998 – 2005



SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss over the two-year period is \$39,865,941. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience over the past two years.

CHART 9

Actuarial Experience for Two-Year Period Ended December 31, 2005

1. Net loss from investments*	-\$46,374,090
2. Net loss from administrative expenses	-73,689
3. Net gain from other experience**	<u>6,581,838</u>
4. Net experience gain/(loss): (1) + (2) + (3)	-\$39,865,941

* Details in Chart 10

** Details in Chart 13

SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Cambridge Retirement System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.50%. The actual rate of return on an actuarial basis for 2005 and 2004 was 4.94% and 4.46%, respectively.

Since the actual return for the two years was less than the assumed return, the Cambridge Retirement System experienced an actuarial loss during the two-year period ending December 31, 2005 with regard to its investments of \$46,374,090, including an adjustment for interest.

This chart shows the gain/(loss) due to investment experience.

CHART 10
Actuarial Value Investment Experience

	December 31, 2005	December 31, 2004
1. Actual return	\$29,628,112	\$25,462,238
2. Average value of assets	599,923,239	570,726,540
3. Actual rate of return: (1) ÷ (2)	4.94%	4.46%
4. Assumed rate of return	8.50%	8.50%
5. Expected return: (2) x (4)	\$50,993,475	\$48,511,756
6. Actuarial gain/(loss): (1) – (5)	<u>-\$21,365,363</u>	<u>-\$23,049,518</u>

SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last eight years, including five-year and eight-year averages.

Based upon this experience and future expectations, we have maintained the assumed rate of return of 8.50%.

CHART 11

Investment Return – Actuarial Value vs. Market Value: 1998 - 2005

Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
1998	\$44,307,173	12.83	\$44,307,173	12.83
1999	30,719,644	7.83	65,002,501	16.56
2000	46,386,113	10.87	28,567,163	6.20
2001	37,316,201	7.81	-17,337,367	-3.51
2002	11,102,978	2.14	-39,456,419	-8.20
2003	32,551,116	6.09	84,572,134	18.96
2004	25,462,238	4.46	49,379,640	9.25
2005	<u>29,628,112</u>	4.94	<u>37,534,023</u>	6.39
Total	\$257,473,575		\$252,568,848	
	Five-year average return	5.04%		4.51%
	Eight-year average return	6.66%		6.75%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

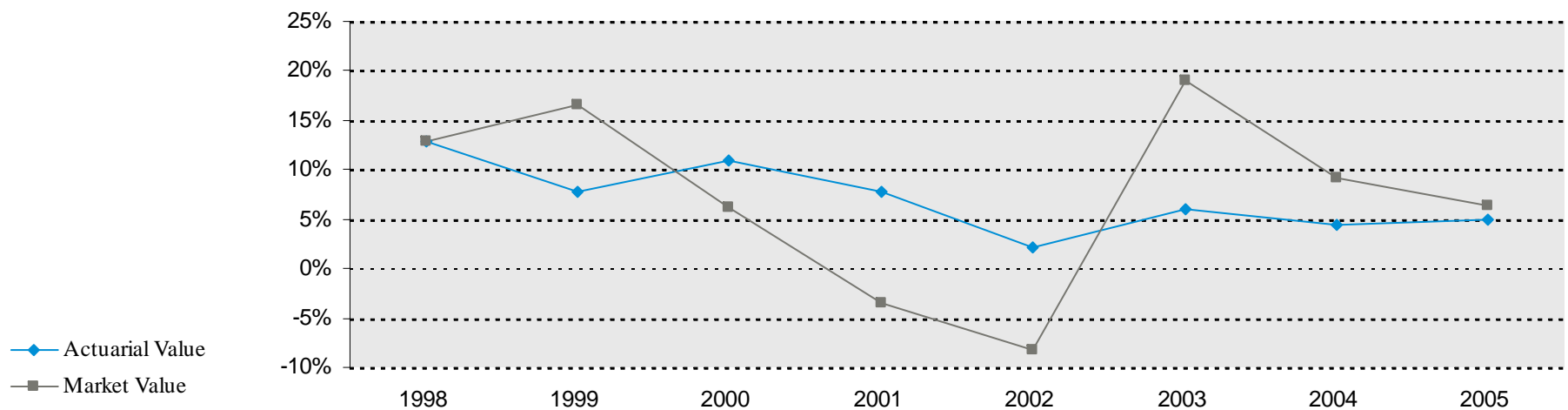
Administrative Expenses

Administrative expenses for the years ended December 31, 2005 and 2004 totaled \$768,175 and \$708,462 compared to the assumption of \$660,000 for calendar 2004 and \$689,700 for calendar 2005. This resulted in a loss of \$73,689 for the two-year period, including an adjustment for interest. We have increased the assumption to \$900,000 for calendar 2006.

This chart illustrates how this leveling effect has actually worked over the years 1998 - 2005.

CHART 12

Market and Actuarial Rates of Return for Years Ended December 31, 1998 - 2005



SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net gain from this other experience for the two-year period ending December 31, 2005 amounted to \$6,581,838 which is 0.9% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Cambridge Retirement System for the two-year period ending December 31, 2005 is shown in the

chart below. A component of the miscellaneous gain is fewer disability retirements than expected.

With this valuation we recommend the following assumption changes:

- The administrative expense assumption was increased from \$660,000 for calendar 2004 to \$900,000 for calendar 2006.
- The salary increase assumption was lowered from 5½% to 4½% for the next three years.
- In 2004, the Public Employee Retirement Administration Commission approved a new mortality table and interest rate to be used in the calculation of the optional form of payment factors. This valuation reflects the change to the new factors.

Changing these assumptions resulted in a net increase in the unfunded liability of \$72,279.

The chart shows elements of the experience gain/(loss) for the most recent years.

CHART 13

Experience Due to Changes in Demographics for Two-Year Period Ended December 31, 2005

1. Salary increases less than expected for continuing actives	\$3,215,415
2. Miscellaneous	<u>3,366,423</u>
3. Total	\$6,581,838

SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability.

The recommended contribution for fiscal 2007 was set at the City's budgeted amount of \$25,191,755, plus an additional contribution of \$1,889,400, for a total amount of \$27,081,155. In fiscal 2008 and later, the recommended contribution will be the prior year's budgeted amount increased 3% plus an additional amount of \$200,000. This will result in a fiscal 2008 appropriation of \$26,147,508 and a fiscal 2009 appropriation of \$26,925,933.

The 1992 ERI liability will be funded in fiscal 2008, the 2002 and 2003 ERI liability will be funded in fiscal 2009 and the remaining unfunded liability will be funded in fiscal 2015. Exhibit G in Section 3 provides more detail on the funding schedule. The prior funding schedule fully funded the System by June 30, 2013.

The remaining unfunded accrued liability includes \$920,000 for the additional liability due to the increased benefits for veterans who retire on an accidental disability.

The chart compares this valuation's recommended contribution with the prior valuation.

CHART 14
Recommended Contribution

	Year Beginning January 1			
	2006		2004	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost	\$25,698,040	12.78%	\$24,714,980	13.41%
2. Administrative expenses	900,000	0.45%	660,000	0.36%
3. Expected employee contributions	<u>-17,906,026</u>	<u>-8.90%</u>	<u>-15,995,186</u>	<u>-8.68%</u>
4. Employer normal cost: (1) + (2) + (3)	\$8,692,014	4.33%	\$9,379,794	5.09%
5. Actuarial accrued liability	740,320,358		655,106,691	
6. Actuarial value of assets	<u>632,059,327</u>		<u>569,500,055</u>	
7. Unfunded actuarial accrued liability: (5) - (6)	\$108,261,031		\$85,606,636	
8. Employer normal cost projected to July 1, 2006 and 2004, adjusted for timing	9,210,972	4.50%	9,987,719	5.30%
9. Projected unfunded actuarial accrued liability	112,768,299		89,170,726	
10. Payment on projected unfunded actuarial accrued liability, adjusted for timing	17,870,183	8.74%	13,990,156	7.43%
11. Recommended contribution: (8) + (10)	<u>\$27,081,155</u>	<u>13.24%</u>	<u>\$23,977,875</u>	<u>12.73%</u>
12. Projected payroll	\$204,576,456		\$188,354,282	

Note: Recommended contributions are assumed to be paid in the middle of the fiscal year.

SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

The recommended contribution is based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

SECTION 2: Valuation Results for the City of Cambridge Contributory Retirement System

E. INFORMATION REQUIRED BY THE GASB

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded on an actuarially sound basis and in accordance with the GASB funding requirements. Chart 15 below presents a graphical representation of this information for the Plan.

The other critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the

actuarial value of assets to the actuarial accrued liabilities of the plan as calculated under GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other changes.

Although GASB requires that the actuarial value of assets be used to determine the funded ratio, Chart 16 shows the funded ratio calculated using both the actuarial value of assets and the market value of assets.

The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

These graphs show key GASB factors.

CHART 15
Required Versus Actual Contributions

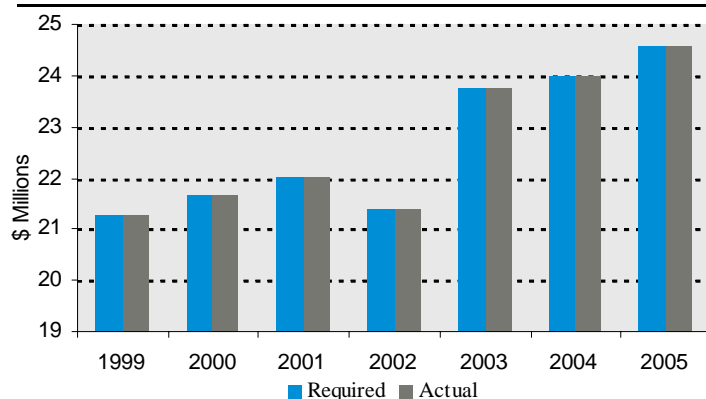
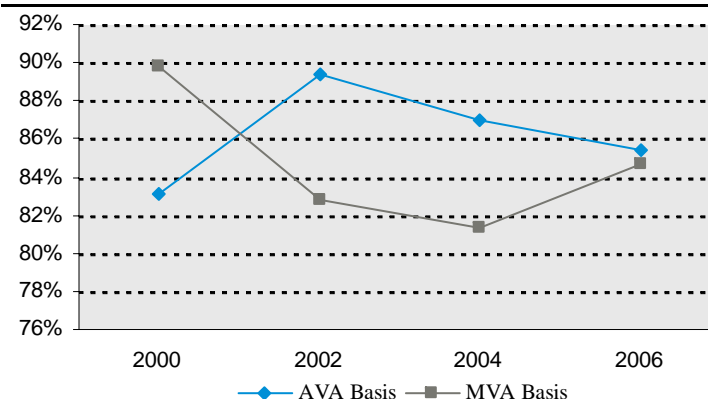


CHART 16
Funded Ratio



SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System

EXHIBIT A

Table of Plan Coverage

	Year Ended December 31		Change From Prior Valuation
Category	2005	2003	
Active participants in valuation:			
Number	3,739	3,825	-2.2%
Average age	44.9	43.7	N/A
Average service	10.7	10.1	N/A
Total payroll	\$192,763,275	\$174,937,539	10.2%
Average payroll	51,555	45,735	12.7%
Account balances	144,021,476	127,147,184	13.3%
Inactive participants entitled to a return of their employee contributions	846	822	N/A
Inactive participants with a vested right to a deferred or immediate benefit	224	N/A	N/A
Retired participants:			
Number in pay status	1,088	1,099	-1.0%
Average age	72.3	72.4	N/A
Average monthly benefit	\$1,882	\$1,676	12.3%
Number in suspended status	3	0	N/A
Disabled participants:			
Number in pay status	282	278	1.4%
Average age	67.0	66.9	N/A
Average monthly benefit	\$2,284	\$2,047	11.6%
Beneficiaries in pay status	366	369	-0.8%

** Calendar year 2005 payroll figures were increased by 3.0% for members of the Housing Department to reflect unsettled bargaining contracts.*

SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System

EXHIBIT B

Participants in Active Service as of December 31, 2005 By Age, Years of Service, and Average Payroll

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	109	105	4	--	--	--	--	--	--	--
	\$30,535	\$30,131	\$41,144	--	--	--	--	--	--	--
25 – 29	327	277	50	--	--	--	--	--	--	--
	\$39,479	\$39,277	\$40,593	--	--	--	--	--	--	--
30 – 34	406	243	125	36	2	--	--	--	--	--
	\$47,152	\$43,488	\$50,321	\$59,860	\$65,560	--	--	--	--	--
35 – 39	448	190	119	92	45	2	--	--	--	--
	\$49,912	\$43,611	\$50,131	\$58,119	\$59,133	\$50,460	--	--	--	--
40 – 44	507	180	113	77	89	44	4	--	--	--
	\$51,600	\$44,578	\$51,600	\$58,378	\$59,070	\$53,463	\$50,356	--	--	--
45 – 49	574	164	103	95	98	69	45	--	--	--
	\$53,868	\$46,292	\$46,983	\$56,646	\$60,415	\$66,405	\$57,896	--	--	--
50 – 54	629	145	90	92	94	83	72	41	12	--
	\$56,684	\$51,170	\$50,127	\$53,718	\$53,593	\$63,431	\$69,905	\$65,189	\$64,397	--
55 – 59	449	79	72	76	45	48	51	68	10	--
	\$60,032	\$54,689	\$45,769	\$56,611	\$65,095	\$63,922	\$62,994	\$74,930	\$73,082	--
60 – 64	214	44	28	20	42	18	22	28	9	3
	\$54,662	\$48,788	\$45,968	\$42,874	\$50,116	\$59,515	\$57,719	\$71,095	\$72,850	\$104,726
65 – 69	56	3	9	10	12	9	8	1	2	2
	\$51,101	\$31,294	\$40,453	\$55,514	\$55,941	\$54,760	\$35,167	\$46,442	\$116,104	\$62,227
70 & over	20	1	--	2	4	2	3	3	2	3
	\$38,583	\$13,582	--	\$26,800	\$38,747	\$65,646	\$14,162	\$21,623	\$58,830	\$64,391
Total	3,739	1,431	713	500	431	275	205	141	35	8
	\$51,555	\$43,681	\$48,496	\$56,178	\$57,699	\$62,050	\$61,689	\$70,000	\$71,689	\$78,976

SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System

EXHIBIT C

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended December 31, 2005	Year Ended December 31, 2004
Contribution income:		
Employer contributions	\$24,577,322	\$23,977,875
Employee contributions	19,558,281	16,696,190
Less administrative expenses	<u>-768,175</u>	<u>-708,462</u>
Net contribution income	\$43,367,428	\$39,965,603
Net investment income	<u>29,628,112</u>	<u>25,462,238</u>
Total income available for benefits	\$72,995,540	\$65,427,841
Less benefit payments:		
Pensions and annuities	-\$35,079,688	-\$34,434,183
Net (8)c reimbursements	-109,953	-94,557
Refunds to members	<u>-3,161,835</u>	<u>-2,983,893</u>
Net benefit payments	-\$38,351,476	-\$37,512,633
Change in reserve for future benefits	\$34,644,064	\$27,915,208

SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System

EXHIBIT D

Development of the Fund Through December 31, 2005

Year Ended December 31	Employer Contributions	Employee Contributions	Other Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1999	\$21,284,009	\$10,617,164	-\$126,316	\$30,719,644	\$2,679,781	\$26,155,325	\$424,606,169
2000	21,668,642	11,847,844	0	46,386,113	585,980	28,506,568	475,416,220
2001	22,030,446	12,607,588	0	37,316,200	581,002	29,842,417	516,947,036
2002	21,398,751	15,252,588	0	11,102,978	572,725	31,634,273	532,494,355
2003	23,761,798	15,390,623	0	32,551,116	641,854	34,055,983	569,500,055
2004	23,977,875	16,696,190	0	25,462,238	708,462	37,512,633	597,415,263
2005	24,577,322	19,558,281	0	29,628,112	768,175	38,351,476	632,059,327

** Investment expenses are included in administrative expenses for 1999 and netted from investment return in 2000 and later.*

SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System**EXHIBIT E****Development of Unfunded Actuarial Accrued Liability and (Gain)/Loss**

	Year Ended	
	December 31, 2005	December 31, 2004
1. Unfunded actuarial accrued liability at beginning of year	\$78,012,341	\$85,606,636
2. Normal cost at beginning of year	26,516,854	25,374,980
3. Total contributions	-44,135,603	-40,674,065
4. Interest		
(a) For whole year on (1) + (2)	\$8,884,982	\$9,433,437
(b) For half year on (3)	<u>-1,875,763</u>	<u>-1,728,648</u>
(c) Total interest	<u>7,009,219</u>	<u>7,704,789</u>
5. Expected unfunded actuarial accrued liability	\$67,402,811	\$78,012,341
6. Changes due to:		
(a) Experience loss	\$39,865,941	
(b) Assumption changes	72,279	
(c) Veterans' allowance for accidental disability retirees	<u>920,000</u>	
(d) Total changes	<u>40,858,220</u>	
7. Unfunded actuarial accrued liability at end of year, after plan changes: (5) + (6)(d)	<u>\$108,261,031</u>	

SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System

EXHIBIT F

Table of Amortization Bases as of July 1, 2006

Type	Annual Payment	Years Remaining	Outstanding Balance
1992 ERI	\$438,830	2.00	\$809,576
2002 ERI	1,236,662	2.50	2,785,709
2003 ERI	408,168	3.00	1,085,873
Remaining liability	<u>13,897,123</u>	8.00	<u>108,087,141</u>
Total	\$15,980,783		\$112,768,299

Notes: Amortization payments include adjustment for timing.

Payments on ERI liability are level.

Refer to Exhibit G for payments on remaining liability in fiscal 2008 and later years.

Payment on remaining liability in fiscal 2007 does not include additional payment.

SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System

EXHIBIT G

Funding Schedule

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of 1992 ERI Liability	(4) Amortization of 2002 ERI Liability	(5) Amortization of 2003 ERI Liability	(6) Amortization of Remaining Unfunded Liability	(7) Total Plan Cost: (2) + (3) + (4) + (5) + (6)	(8) Additional Payment	(9) Total Unfunded Actuarial Accrued Liability
2007	\$9,210,972	\$438,830	\$1,236,662	\$408,168	\$13,897,123	\$25,191,755	\$1,889,400	\$112,768,299
2008	9,533,356	438,830	1,236,662	408,168	14,330,492	25,947,508	200,000	103,739,426
2009	9,867,023	-	618,331	408,168	15,832,411	26,725,933	200,000	95,251,423
2010	10,311,039	-	-	-	17,216,672	27,527,711	200,000	85,578,665
2011	10,775,036	-	-	-	17,578,506	28,353,542	200,000	74,711,066
2012	11,259,913	-	-	-	17,944,235	29,204,148	200,000	62,542,822
2013	11,766,609	-	-	-	18,313,664	30,080,273	200,000	48,959,321
2014	12,296,106	-	-	-	18,686,575	30,982,681	200,000	33,836,414
2015	12,849,431	-	-	-	17,549,039	30,398,470	200,000	17,039,623
2016	13,427,655	-	-	-	-	13,427,655	-	-
2017	14,031,899	-	-	-	-	14,031,899	-	-
2018	14,663,334	-	-	-	-	14,663,334	-	-
2019	15,323,184	-	-	-	-	15,323,184	-	-
2020	16,012,727	-	-	-	-	16,012,727	-	-
2021	16,733,300	-	-	-	-	16,733,300	-	-
2022	17,486,299	-	-	-	-	17,486,299	-	-
2023	18,273,182	-	-	-	-	18,273,182	-	-
2024	19,095,475	-	-	-	-	19,095,475	-	-
2025	19,954,771	-	-	-	-	19,954,771	-	-
2026	20,852,736	-	-	-	-	20,852,736	-	-
2027	21,791,109	-	-	-	-	21,791,109	-	-
2028	22,771,709	-	-	-	-	22,771,709	-	-

Notes: Recommended contributions are assumed to be paid in the middle of the fiscal year.

Item (2) is assumed to increase 3½% per year for two years and 4½% per year thereafter.

Item (8) is as of the beginning of the fiscal year.

SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System

EXHIBIT H

Department Statistics as of December 31, 2005

Category	Fire	Police	Water	Sewer	Housing	Redevel.	PHC	School	Other	Total
Active participants in valuation										
Number	266	254	51	204	153	3	1,593	510	705	3,739
Average age	44.9	42.4	48.9	48.1	45.5	54.0	43.4	47.0	46	44.9
Average service	17.4	15.6	15.4	13.1	11.2	14	7.9	10.3	12.1	10.7
Total payroll	\$18,563,603	\$17,886,692	\$2,712,060	\$8,844,395	\$7,303,190	\$259,070	\$85,898,108	\$17,132,180	\$34,163,977	\$192,763,275
Average payroll	69,788	70,420	53,178	43,355	47,733	86,357	53,922	33,593	48,460	51,555
Inactive participants entitled to a return of their employee contributions										
	1	4	2	13	27	0	485	190	124	846
Inactive participants with a vested right to a deferred or immediate benefit										
	0	5	0	6	7	1	99	49	57	224
Retired participants and beneficiaries in pay status										
Retired participants	105	129	28	88	44	10	243	204	240	1,091
Disabled participants	84	73	9	32	10	0	25	28	21	282
Beneficiaries	74	65	23	69	18	5	30	34	48	366
Total number in pay status	263	267	60	189	72	15	298	266	309	1,739
Total monthly benefits	\$698,465	\$730,203	\$90,225	\$253,015	\$108,710	\$17,154	\$423,060	\$310,027	\$446,441	\$3,077,300
Average monthly benefit	2,656	2,735	1,504	1,339	1,510	1,144	1,420	1,166	1,445	1,770

SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System

EXHIBIT I

Department Results as of January 1, 2006

Category	Fire	Police	Water	Sewer	Housing	Redevel.	PHC	School	Other	Total
1. Total normal cost	\$2,985,670	\$2,841,824	\$318,361	\$1,118,284	\$904,238	\$29,100	\$11,020,600	\$2,329,588	\$4,150,375	\$25,698,040
2. Administrative expenses	104,565	99,527	11,150	39,165	31,668	1,019	385,964	81,587	145,355	900,000
3. Expected employee contributions	-1,633,598	-1,636,230	-243,396	-769,884	-677,678	-17,440	-8,341,448	-1,521,268	-3,065,084	-17,906,026
4. Employer normal cost: (1) + (2) + (3)	\$1,456,637	\$1,305,121	\$86,115	\$387,565	\$258,228	\$12,679	\$3,065,116	\$889,907	\$1,230,646	\$8,692,014
5. Employer normal cost as a percent of payroll	7.51%	6.98%	3.04%	4.20%	3.39%	4.68%	3.42%	4.98%	3.45%	4.33%
6. Actuarial accrued liability	\$137,473,394	\$134,652,377	\$15,702,450	\$46,815,396	\$25,878,526	\$2,963,694	\$180,529,053	\$70,772,538	\$125,532,930	\$740,320,358
7. Actuarial value of assets	117,369,920	114,961,435	13,406,196	39,969,329	22,094,170	2,530,297	154,129,318	60,423,089	107,175,573	632,059,327
8. Unfunded actuarial accrued liability: (6) – (7)	\$20,103,474	\$19,690,942	\$2,296,254	\$6,846,067	\$3,784,356	\$433,397	\$26,399,735	\$10,349,449	\$18,357,357	\$108,261,031
9. Projected calendar year payroll	19,393,031	18,688,049	2,831,996	9,229,993	7,618,348	270,728	89,533,885	17,880,183	35,641,473	201,087,686

SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System

EXHIBIT J

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial

Assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability

For Actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability

For Pensioners:

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued Liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

SECTION 3: Supplemental Information for the City of Cambridge Contributory Retirement System

Amortization of the Unfunded

Actuarial Accrued Liability: Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return:

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

SECTION 4: Reporting Information for the City of Cambridge Contributory Retirement System

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 366 beneficiaries in pay status and 3 retired participants in suspended status)	1,739
2. Participants active during the year ended December 31, 2005 with total accumulated contributions of \$144,021,476 and projected payroll of \$201,087,686	3,739
3. Inactive participants with a right to a return of their employee contributions as of December 31, 2005	846
4. Inactive participants with a vested right to a deferred or immediate benefit as of December 31, 2005	224

The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses	\$26,598,040
2. Expected employee contributions	<u>-17,906,026</u>
3. Employer normal cost: (1) + (2)	\$8,692,014
4. Actuarial accrued liability	740,320,358
Retired participants and beneficiaries	\$333,122,884
Active participants	393,077,699
Inactive participants	14,119,775
5. Actuarial value of assets (\$627,154,599 at market value)	632,059,327
6. Unfunded actuarial accrued liability: (4) - (5)	108,261,031

The actuarial factors projected to July 1, 2006 are as follows:

1. Employer normal cost projected to July 1, 2006, adjusted for timing	\$9,210,972
2. Projected unfunded actuarial accrued liability	112,768,299
3. Payment on projected unfunded actuarial accrued liability, adjusted for timing	17,870,183
4. Total recommended contribution: (1) + (3)	<u>\$27,081,155</u>
5. Projected payroll	\$204,576,456
6. Total recommended contribution as a percentage of projected payroll: (4) ÷ (5)	13.24%

Note: Recommended contributions are assumed to be paid in the middle of the fiscal year.

SECTION 4: Reporting Information for the City of Cambridge Contributory Retirement System

EXHIBIT II

Supplementary Information Required by the GASB – Schedule of Employer Contributions

Plan Year Ended December 31	Annual Required Contributions	Actual Contributions	Percentage Contributed
1999	\$21,284,009	\$21,284,009	100.0%
2000	21,668,642	21,668,642	100.0%
2001	22,030,446	22,030,446	100.0%
2002	21,398,751	21,398,751	100.0%
2003	23,761,798	23,761,798	100.0%
2004	23,977,875	23,977,875	100.0%
2005	24,577,322	24,577,322	100.0%

SECTION 4: Reporting Information for the City of Cambridge Contributory Retirement System

EXHIBIT III

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
01/01/1991	\$118,507,379	\$251,034,632	\$132,527,253	47.21%	\$83,459,875	158.79%
01/01/1994	182,631,507	323,643,787	141,012,280	56.43%	109,774,937	128.46%
01/01/1996	233,883,060	361,884,553	128,001,493	64.63%	114,484,265	111.81%
01/01/1998	342,787,664	436,216,298	93,428,634	78.58%	132,439,810	70.54%
01/01/2000*	424,606,168	510,972,656	86,366,488	83.10%	140,488,609	61.48%
01/01/2002	516,947,036	578,049,645	61,102,609	89.43%	167,302,844	36.52%
01/01/2004	569,500,055	655,106,691	85,606,636	86.93%	184,254,181	46.46%
01/01/2006	632,059,327	740,320,358	108,261,031	85.38%	201,087,686	53.84%

* Reflects change in asset valuation method.

SECTION 4: Reporting Information for the City of Cambridge Contributory Retirement System

EXHIBIT IV

Supplementary Information Required by the GASB

Valuation date	January 1, 2006
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level dollar amortization of ERI liabilities and increasing amortization for remaining unfunded liability
Remaining amortization period	2 years from July 1, 2006 for 1992 ERI, 2½ years from July 1, 2006 for 2002 ERI, 3 years from July 1, 2006 for 2003 ERI and 9 years from July 1, 2006 for remaining unfunded liability
Asset valuation method	The difference between the expected return and the actual investment return on a market value basis is recognized over a five-year period.
Actuarial assumptions:	
Investment rate of return	8.50%
Projected salary increases	4.50% over the next 3 years, 5.50% thereafter
Cost of living adjustments	3.00% of first \$12,000 of retirement income
Plan membership:	
Retired participants and beneficiaries receiving benefits	1,736
Terminated participants entitled to a return of their employee contributions	846
Terminated participants with a vested right to a deferred or immediate benefit	224
Active participants	<u>3,739</u>
Total	6,545

SECTION 4: Reporting Information for the City of Cambridge Contributory Retirement System

EXHIBIT V

Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

<i>Healthy:</i>	1994 Group Annuity Mortality Table
<i>Disabled:</i>	1994 Group Annuity Mortality Table set forward five years

Termination Rates before Retirement:

Groups 1 and 2 - Rate (%)					
	Mortality ¹		Disability	Withdrawal	
Age	Male	Female		PHC	All Other Departments
20	0.05	0.03	0.06	9.94	7.94
25	0.07	0.03	0.09	9.67	7.72
30	0.08	0.04	0.11	9.30	7.22
35	0.09	0.05	0.15	8.71	6.28
40	0.11	0.07	0.22	7.75	5.15
45	0.16	0.10	0.36	6.35	3.98
50	0.26	0.14	0.61	4.22	2.56
55	0.44	0.23	1.01	1.55	0.00
60	0.80	0.44	1.63	0.15	0.00

*Notes: 50% of the disability rates shown represent accidental disability.
20% of the accidental disabilities will die from the same cause as the disability
50% of the death rates shown represent accidental death.*

SECTION 4: Reporting Information for the City of Cambridge Contributory Retirement System

Age	Group 4 - Rate (%)			
	Mortality ²		Disability	Withdrawal
	Male	Female		
20	0.05	0.03	0.12	0.00
25	0.07	0.03	0.17	0.00
30	0.08	0.04	0.22	0.00
35	0.09	0.05	0.29	0.00
40	0.11	0.07	0.44	0.00
45	0.16	0.10	0.72	0.00
50	0.26	0.14	1.21	0.00
55	0.44	0.23	2.02	0.00
60	0.80	0.44	3.25	0.00

Notes: 90% of the disability rates shown represent accidental disability.
60% of the accidental disabilities will die from the same cause as the disability
50% of the death rates shown represent accidental death.

Retirement Rates:

Groups 1 and 2		Group 4	
Age	Rate (%)	Age	Rate (%)
55	5.0	50	5.0
56	2.0	51	2.0
57	2.0	52	2.0
58	2.0	53	2.0
59	2.0	54	2.0
60	5.0	55	25.0
61	2.0	56	2.0
62	25.0	57	2.0
63	5.0	58	2.0
64	5.0	59	2.0
65	10.0	60	25.0
66	10.0	61	10.0

SECTION 4: Reporting Information for the City of Cambridge Contributory Retirement System

Retirement Rates (continued):

Groups 1 and 2		Group 4	
Age	Rate (%)	Age	Rate (%)
67	100.0	62	10.0
68	100.0	63	10.0
69	100.0	64	10.0
70	100.0	65	100.0

Unknown Data for Participants: Same as those exhibited by participants with similar known characteristics.

Age of Spouse: Males are assumed to be three years older than their spouses.

Percent Married: 100%

Net Investment Return: 8.50%

Interest on Employee Contributions: 3.50%

Salary Increases:

Age	Present salary as a percent of salary at 65	Annual increase rate (%)
20	9.25	4.50 for 3 years, 5.50 thereafter
25	12.09	4.50 for 3 years, 5.50 thereafter
30	15.80	4.50 for 3 years, 5.50 thereafter
35	20.65	4.50 for 3 years, 5.50 thereafter
40	26.98	4.50 for 3 years, 5.50 thereafter
45	35.27	4.50 for 3 years, 5.50 thereafter
50	46.09	4.50 for 3 years, 5.50 thereafter
55	60.24	4.50 for 3 years, 5.50 thereafter
60	78.73	4.50 for 3 years, 5.50 thereafter

Includes allowance for inflation of 3.50% for 3 years, 4.50% thereafter.

Administrative Expenses: \$900,000 for calendar 2006, increasing 4.50% per year (previously, \$660,000 for calendar 2004).

SECTION 4: Reporting Information for the City of Cambridge Contributory Retirement System

Total Service:	Service is calculated for Adjusted Date of Hire reported in the data.
2005 Salary:	<p>2005 salaries are equal to salaries provided in the data, except for actives missing salary, where salaries were calculated from annualized contributions divided by the contribution rates provided.</p> <p>The salaries of participants in the Housing Authority were increased by 3% to reflect unsettled bargaining agreements.</p>
Actuarial Value of Assets:	<p>Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected market return and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.</p>
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method. Entry Age is the age of the participant at Adjusted Date of Hire. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary.
Changes in Assumptions:	<p>Based on past experience and future expectations, the administrative expense assumption was increased from \$660,000 for calendar 2004 to \$900,000 for calendar 2006.</p> <p>The salary increase assumption has been changed from 5.5% to 4.5% for three years and 5.5% thereafter.</p>

SECTION 4: Reporting Information for the City of Cambridge Contributory Retirement System

EXHIBIT VI

Summary of Plan Provisions

This exhibit summarizes the major provisions of Chapter 32 of the Laws of Massachusetts.

Plan Year: January 1 – December 31

Retirement Benefits

Employees covered by the Contributory Retirement Law are classified into one of four groups depending on job classification. Group 1 comprises most positions in state and local government. It is the general category of public employees. Group 4 comprises mainly police and firefighters. Group 2 is for other specified hazardous occupations. (Officers and inspectors of the State Police are classified as Group 3.)

The annual amount of the retirement allowance is based on the participant's final three-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following table based on the age of the participant at retirement:

Age Last Birthday at Date of Retirement			
Percent	Group 1	Group 2	Group 4
2.5	65 or over	60 or over	55 or over
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	--	49
1.8	58	--	48
1.7	57	--	47
1.6	56	--	46
1.5	55	--	45

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A participant's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last three years of creditable service prior to retirement. The \$30,000 cap on salary used in a benefit determination for any employee hired after January 1, 1979 has been removed.

The maximum annual amount of the retirement allowance is 80 percent of the participant's final three-year average salary. Any participant who is a veteran also receives an additional yearly retirement allowance of fifteen dollars per year of creditable service, not exceeding three hundred dollars. The veteran allowance is paid in addition to the 80 percent maximum.

Employee Contributions

Employees hired before January 1, 1975 contribute 5 percent of their salary; employees hired after December 31, 1974 and before January 1, 1984 contribute 7 percent; employees hired after January 1, 1984 contribute 8 percent; employees hired after July 1, 1996 contribute 9 percent. In addition, employees hired after December 31, 1978 contribute an additional 2 percent of salary in excess of \$30,000.

Employees hired after 1983 who leave with less than five years of credited service receive no interest on their contributions and employees who leave with five but less than ten years receive one-half the rate of regular interest otherwise payable.

Retirement Benefits (Superannuation)

Participants of Group 1, 2 or 4 may retire upon the attainment of age 55. For retirement at ages below 55, twenty years of creditable service is required.

Participants who terminate before age 55 with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the system).

Ordinary Disability Benefits

A participant who is unable to perform his job due to a non-occupational disability will receive a retirement allowance if he has ten or more years of creditable service and has not reached age 55. The annual amount of such allowance shall be determined as if the participant retired for superannuation at age 55, based on the

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amount of creditable service at the date of disability. For veterans, there is a minimum benefit of 50 percent of the participant's most recent year's pay plus an annuity based on his own contributions.

Accidental Disability Benefit

For a job-connected disability the benefit is 72 percent of the participant's most recent annual pay plus an annuity based on his own contributions, plus additional amounts for surviving children. Benefits are capped at 75 percent of annual rate of regular compensation for employees who become participants after January 1, 1988.

Death Benefits

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. Alternatively, if the employee were eligible to retire on the date of his death, a spouse's benefit will be paid equal to the amount the employee would have received under Option C (previously, two-thirds of the amount). The surviving spouse of a participant who dies with two or more years of credited service has the option of a refund of the employee's contributions or a monthly benefit regardless of eligibility to retire, if they were married for at least one year. There is also a minimum widow's pension of \$500 per month, and there are additional amounts for surviving children.

If an employee's death is job-connected, the spouse will receive 72 percent of the participant's most recent annual pay in addition to a refund of the participant's accumulated deductions, plus additional amounts for surviving children.

"Heart And Lung Law" And Cancer Presumption

Any case of hypertension or heart disease resulting in total or partial disability or death to a uniformed fireman or permanent participant of a police department is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. Any case of disease of the lungs or respiratory tract resulting in total disability or death to a uniformed fireman is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. There is an additional presumption for uniformed firemen that certain types of cancer are job-related if onset occurs while actively employed or within five years of retirement.

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Options

Participants may elect to receive a full retirement allowance payable for life under Option A. Under Option B a participant may elect to receive a lower monthly allowance in exchange for a guarantee that at his death any of his contributions not expended for annuity payments will be refunded to his beneficiary. Option C allows the participant to take a lesser retirement allowance in exchange for providing his survivor with two-thirds of the lesser amount. Option C pensioners who retire in 1988 or later will have their benefits converted from a reduced to a full retirement if the beneficiary predeceases the retiree.

Post-Retirement Benefits

The Board has adopted the provisions of Section 51 of Chapter 127 of the Acts of 1999, which provide that the Retirement Board may approve an annual COLA in excess of the Consumer Price Index but not to exceed a 3% COLA on the first \$12,000 of a retirement allowance. Cost-of-living increases granted prior to July 1, 1998 are reimbursed by the Commonwealth and not reflected in this report.